

CLAIMS

What is claimed is:

- Claim 1. A method for storing a semantic object, the method
5 comprising:
summarizing attributes of a semantic object;
indexing the summary of attributes; and
storing the summary of attributes and the index of the summary of
attributes.
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- Claim 2. The method of claim 1, wherein the semantic object
comprises a summary representation of raw data measurements.
- Claim 3. The method of claim 1, further comprising searching a
15 database of a plurality of indexed attributes of semantic objects.
- Claim 4. The method of claim 3, further comprising searching the
index of the plurality of semantic object attributes to identify a semantic
object having attributes that match a query and retrieving the identified
20 semantic object.
- Claim 5. The method of claim 3, wherein an optimizing mechanism
is used in searching to optimize the process of searching.
- 25 Claim 6. The method of claim 1, wherein the semantic object

represents a model of a phenomena of interest that is measured by a collection of data which exceeds a data size that is accessible with a predetermined efficiency by multiple simultaneous users.

5 Claim 7. The method of claim 1, wherein the semantic object comprises geological survey data with summary statistics including one of slice labels, signal strength, and coordinates of the surveyed segments.

Claim 8. The method of claim 1, wherein the index of the summary
10 of attributes comprises a plurality of key features that have been resolved into a set of data points and summary statistics.

Claim 9. The method of claim 1, wherein the summary of attributes comprises one of a confidence level, summary statistics and a compact
15 approximation.

Claim 10. The method of claim 9, wherein the compact approximation comprises a multiple segment polyline.

20 Claim 11. The method of claim 10, wherein each segment of the multiple segment polyline comprises a best fit line having end point coordinates and a slope.

Claim 12. The method of claim 9, wherein the confidence level
25 represents a degree of accuracy of classification for the semantic object.

Claim 13. A method of deploying computer infrastructure, comprising integrating computer-readable code into a computing system, wherein the code in combination with the computing system is capable of performing
5 the method of claim 1.

Claim 14. A signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processor, the program comprising:
10 instructions for summarizing attributes of a semantic object;
instructions for indexing the summary of attributes; and
instructions for storing the summary of attributes and the index of the summary of attributes.

15 Claim 15. The signal-bearing medium of claim 14, wherein the semantic object comprises a summary representation of raw data measurements.

Claim 16. The signal-bearing medium of claim 14, further comprising
20 instructions for searching a database of a plurality of indexed attributes of semantic objects.

Claim 17. The signal-bearing medium of claim 16, further comprising instructions for searching the index of the plurality of semantic object
25 attributes to identify a semantic object having attributes that match a query

and retrieving the identified semantic object.

Claim 18. The signal-bearing medium of claim 16, wherein an
optimizing mechanism is used in searching to optimize the process of
5 searching.

Claim 19. The signal-bearing medium of claim 14, wherein the
semantic object represents a model of a phenomena of interest that is
measured by a collection of data which exceeds a data size that is accesible
10 with a predetermined efficiency by multiple simultaneous users.

Claim 20. The signal-bearing medium of claim 14, wherein the
semantic object comprises geological survey data with summary statistics
including one of slice labels, signal strength, and coordinates of the
15 surveyed segments.

Claim 21. The signal-bearing medium of claim 14, wherein the index
of the summary of attributes comprises a plurality of key features that have
been resolved into a set of data points and summary statistics
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Claim 22. The signal-bearing medium of claim 14, wherein the
summary of attributes comprises one of a confidence level, summary
statistics and a compact approximation.

25 Claim 23. The signal-bearing medium of claim 22, wherein the

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compact approximation comprises a multiple segment polyline.

Claim 24. The signal-bearing medium of claim 23, wherein each
segment of the multiple segment polyline comprises a best fit line having
5 end point coordinates and a slope.

Claim 25. The signal-bearing medium of claim 22, wherein the
confidence level represents a degree of accuracy of classification for the
semantic object.

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Claim 26. A system for storing a semantic object, the system
comprising:

a semantic object summarizer that summarizes attributes of a
semantic object;

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an indexer that indexes the summarized attributes; and

a database that stores the summary of attributes and the index of
the summary of attributes.

Claim 27. The system of claim 26, wherein the semantic object
20 comprises a summary representation of raw data measurements.

Claim 28. The system of claim 26, further comprising a searching
device that searches the database of a plurality of indexed attributes of
semantic objects.

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Claim 29. The system of claim 26, further comprising a searching device that searches the index of the plurality of semantic object attributes to identify a semantic object having attributes that match a query and retrieving the identified semantic object.

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Claim 30. The system of claim 28, wherein said searching device comprises an optimizing mechanism that optimizes the process of searching.

10 Claim 31. The system of claim 26, wherein the semantic object represents a model of a phenomena of interest that is measured by a collection of data which exceeds a data size that is accessible with a predetermined efficiency by multiple simultaneous users.

15 Claim 32. The system of claim 26, wherein the semantic object comprises geological survey data with summary statistics including one of slice labels, signal strength, and coordinates of the surveyed segments.

Claim 33. The system of claim 26, wherein the index of the summary
20 of attributes comprises a plurality of key features that have been resolved into a set of data points and summary statistics.

Claim 34. The system of claim 26, wherein the summary of attributes
25 comprises one of a confidence level, summary statistics and a compact approximation.

Claim 35. The system of claim 34, wherein the compact approximation comprises a multiple segment polyline.

5 Claim 36. The system of claim 35, wherein each segment of the multiple segment polyline comprises a best fit line having end point coordinates and a slope.

Claim 37. The system of claim 34, wherein the confidence level
10 represents a degree of accuracy of classification for the semantic object.